Time Remaining: 44/45 (Minutes)

Q.1 Test 2 Unit 2 Bioenergetics A Biology Unit Wise

Which of the following statements about photosynthesis is wrong?

(a) Carbon dioxide molecules are bound into carbohydrates during the second half of the process

(b) It is a catabolic process that releases the energy stored in glucose molecules

(c) Oxygen is released as a waste product

(d) May occur in both prokaryotic and eukaryotic cells

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Click Here if Image Doesn't Load

Correct Answer:

A B C D

Next

Time Remaining: 44/45 (Minutes)

Q.2 Test 2 Unit 2 Bioenergetics A Biology Unit Wise

How does photosynthesis occur?

(a) Glucose is broken down into carbon dioxide using the energy of the sun

(b) The products of the light reaction are used to create glucose from carbon dioxide

(c) The sunlight directly powers ATP synthase, which catalyzes the creation of glucose

(d) The electrons from metals are used for chemiosmosis

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Correct Answer:

A B C D

Next

Back

Time Remaining: 44/45 (Minutes)

Q.3 | Test 2 Unit 2 Bioenergetics A | Biology Unit Wise

NADPH and ATP, formed during light reaction of photosynthesis have:

(a) Assimilating & reducing power respectively
(b) Reducing & assimilating power respectively
(c) Oxidizing & reducing power respectively
(d) Reducing & oxidizing power respectively

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Correct Answer:

A B C D

Next

Back

Time Remaining: 44/45 (Minutes)

Q.4 | Test 2 Unit 2 Bioenergetics A | Biology Unit Wise

What is wrong about dark reaction of photosynthesis?

(a) It only takes place in dark
(b) It utilizes the light directly
(c) It is independent from light reaction
(d) All of these

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Correct Answer:

A B C D

Next

Back

Time Remaining: 44/45 (Minutes)

Q.5 | Test 2 Unit 2 Bioenergetics A | Biology Unit Wise

CO_2 and water during photosynthesis:

(a) React with each other
(b) Show their action at same time
(c) Is reduced and oxidized, respectively
(d) None of these

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Correct Answer:

A B C D

Next

Back

Time Remaining: 44/45 (Minutes)

Q:6 | Test 2 Unit 2 Bioenergetics A | Biology Unit Wise

Photolysis is the splitting of water in the presence of:

(a) Light
(b) Enzymes
(c) Oxygen
(d) Both 'a' & 'b'

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Correct Answer:

A B C D

Next

Back

Time Remaining: 43/45 (Minutes)

Q.7 | Test 2 Unit 2 Bioenergetics A | Biology Unit Wise

Dark reaction of photosynthesis is also called as:

(a) C4 cycle
(b) Light dependent reaction
(c) Calvin cycle
(d) All of these

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Correct Answer:

A B C D

Next

Back

Time Remaining: 43/45 (Minutes)

Q:8 | Test 2 Unit 2 Bioenergetics A | Biology Unit Wise

Unidirectional flow of e^- in non-cyclic photophosphorylation is:

(a) PS II $\xrightarrow{e^-}$ PS I $\xrightarrow{e^-}$ NADP $\xrightarrow{e^-}$ water

(b) Water $\xrightarrow{e^-}$ PSII $\xrightarrow{e^-}$ PS I $\xrightarrow{e^-}$ NADP

(c) PS I $\xrightarrow{e^-}$ NADP $\xrightarrow{e^-}$ water $\xrightarrow{e^-}$ PS II

(d) Water $\xrightarrow{e^-}$ PS I $\xrightarrow{e^-}$ PS II $\xrightarrow{e^-}$ NADP

Click Here if Image Doesn't Load

Correct Answer:

A B C D

Next

Back

Time Remaining: 43/45 (Minutes)

Q.9 | Test 2 Unit 2 Bioenergetics A | Biology Unit Wise

The head and tail of chlorophyll are made up of _____ respectively:

(a) Pyrrole & Tetrapyrrole
(b) Porphyrin & Phytin
(c) Porphyrin & Phytol
(d) Tetrapyrrole & Magnesium

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Correct Answer:

A B C D

Next

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Time Remaining: 43/45 (Minutes)

Q.10 Test 2 Unit 2 Bioenergetics A Biology Unit Wise

Which of the following connect the primary and secondary processes of photosynthesis?

(a) $NADPH_2$
(b) ATP & NADPH
(c) ATP
(d) Ferridoxins

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Click Here if Image Doesn't Load

Correct Answer:

A B C D

Next

Back

Time Remaining: 43:45 (Minutes)

In non-cyclic photophosphorylation, the electron emitted by P_{680} is replaced by electron from:

(a) NADP
(b) Water
(c) Ferredoxin
(d) Chlorophyll-a

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Next

Back

Time Remaining: 43/45 (Minutes)

Test 2 Unit 2 Bioenergetics A — Biology Unit Wise

Which of the following molecules are formed in the Calvin cycle while using ATP?

(a) 1,3-bisphosphoglycerate and Ribulose bisphosphate
(b) Ribulose bisphosphate and Glyceraldehyde-3-phosphate
(c) 3-phosphoglycerate and Ribulose bisphosphate
(d) Glyceraldehyde3-phosphate and Glucose

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A B C D

Next

Back

Time Remaining: 43/45 (Minutes)

Test 2 Unit 2 Bioenergetics A | Biology Unit Wise

Which of the following statements is true for the Calvin cycle?

(a) It does not depend on sunlight to operate
(b) It is fueled by glucose
(c) Carbon dioxide is converted into water and oxygen
(d) It occurs in the nucleus of a cell

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Back

Time Remaining 43/45 (Minutes)

Test 2 Unit 2 Bioenergetics A — Biology Unit Wise

In the Calvin cycle, what is the first product formed after the entry of carbon dioxide?

(a) Glucose
(b) Ribulose-1,5-bisphosphate
(c) 3-Phosphoglycerate
(d) Glyceraldehyde-3-phosphate

Next

Back

Time Remaining 43/45 (Minutes)

Test 2 Unit 2 Bioenergetics A — Biology Unit Wise

In the Calvin cycle, which molecule combines with carbon dioxide?

(a) Glucose
(b) 3-phosphoglycerate
(c) Glyceraldehyde3-phosphate
(d) Ribulose-1,5-bisphosphate

Next

Back

Time Remaining: 42/45 (Minutes)

Test 2 Unit 2 Bioenergetics A — Biology Unit Wise

Arrange the two following lists into their most appropriate pairs:

	I - Dioxygen (O_2) generation
	II - Reduction of ferredoxin
	III - Electron transport chain
	IV - Absorption of light

(a) A-I, B-II, C-III, D-IV (b) A-IV, B-III, C-I, D-II
(c) A-IV, B-III, C-II, D-I (d) A-II, B-IV, C-I, D-II

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A B C D

Next

Back

Time Remaining: 42/45 (Minutes)

Test 2 Unit 2 Bioenergetics A — Biology Unit Wise

Both photosynthesis and respiration require:

(a) Chloroplasts
(b) Sunlight
(c) Mitochondria
(d) Cytochromes

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Next

Back

Time Remaining 42/45 (Minutes)

Test 2 Unit 2 Bioenergetics A — Biology Unit Wise

Which one of the following is not true about the light reactions of photosynthesis?

(a) NADPH is not produced in cyclic electrons transport in light reactions.

(b) The flow of electrons from water to NADP in non-cyclic electron transport produces one ATP

(c) Reactions of the two photosystems are needed for the reduction of NADP

(d) P_{680} and P_{700} are the reaction centers of PS I and PS II respectively reactions

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Back

Time Remaining: 42/45 (Minutes)

Test 2 Unit 2 Bioenergetics A — Biology Unit Wise

The pathway that will produce oxygen during photosynthesis is:

(a) Krebs cycle
(b) Non-cyclic electron flow
(c) Light-independent reactions
(d) Cyclic electron flow

Next

Back

Time Remaining 42/45 (Minutes)

Test 2 Unit 2 Bioenergetics A — Biology Unit Wise

Calvin cycle consists of how many phases?

(a) 1 (b) 2
(c) 3 (d) 4

A B C D

Next

Back

Time Remaining: 42/45 (Minutes)

Test 2 Unit 2 Bioenergetics A — Biology Unit Wise

3-Phosphoglycerate is formed during _____ phase of C3 cycle:

(a) Preparatory
(b) Oxidative
(c) Reduction
(d) Carbon fixation

Next

Back

Time Remaining 42/45 (Minutes)

Test 2 Unit 2 Bioenergetics A — Biology Unit Wise

Where does the Calvin Cycle occur?

(a) Thylakoid
(b) Stroma
(c) Lumen
(d) Mitochondria

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A B C D

Next

Back

Time Remaining: 42/45 (Minutes)

Test 2 Unit 2 Bioenergetics A — Biology Unit Wise

Which of the following is not a reactant of the Calvin Cycle?

(a) NADPH
(b) ATP
(c) Oxygen
(d) Carbon dioxide

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Back

Time Remaining: 47 /45 (Minutes)

Test 2 Unit 2 Bioenergetics A — Biology Unit Wise

When carbon first enters the Calvin cycle, what molecule does it combine with?

(a) 3PG
(b) G_3P
(c) RuBP
(d) ATP

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A B C D

Next

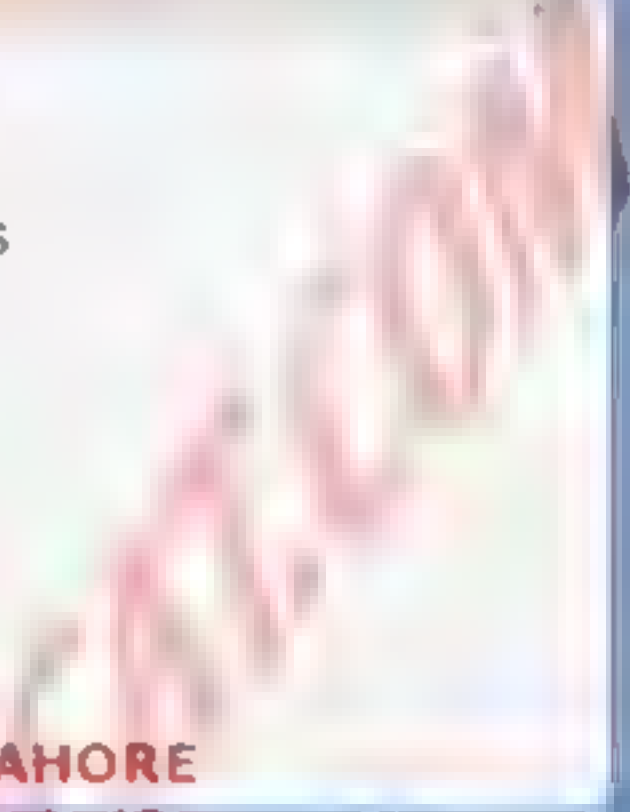
Back

Time Remaining: 41 /45 (Minutes)

Test 2 Unit 2 Bioenergetics A — Biology Unit Wise

Calvin cycle is involved in the:

(a) Synthesis of carbohydrates
(b) Synthesis of NADPH
(c) Synthesis of ATP
(d) Hydrolysis of water



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Back

Time Remaining 47 /45 (Minutes)

Test 2 Unit 2 Bioenergetics A | Biology Unit Wise

How many molecules of 3-phosphoglycerate is synthesized from the reaction between $6CO_2$ and 6RuBp?

(a) 3
(b) 6
(c) 12
(d) 18

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A B C D

Next

Back

Time Remaining 47 /45 (Minutes)

Test 2 Unit 2 Bioenergetics A — Biology Unit Wise

How many ATP and NADPH molecules are used in the reduction phase to convert 3-phosphoglycerate to glyceraldehyde-3-phosphate?

(a) 6 ATP & 6 NADPH
(b) 6 ATP only
(c) 12 ATP & 12 NADPH
(d) 12 NADPH only

Next

Back

Time Remaining: 47 /45 (Minutes)

Test 2 Unit 2 Bioenergetics A — Biology Unit Wise

How many glyceraldehyde-3-phosphates are required to synthesize one glucose molecule?

(a) 2
(b) 3
(c) 6
(d) 12

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Back

Time Remaining: 41 /45 (Minutes)

Test 2 Unit 2 Bioenergetics A — Biology Unit Wise

C_3 cycle involves all the steps except:

(a) Reduction
(b) Carbon fixation
(c) ATP synthesis
(d) Regeneration of RuBP

Next

Back

Time Remaining: 41 /45 (Minutes)

Test 2 Unit 2 Bioenergetics A — Biology Unit Wise

How many ATP and NADPH are used for the regeneration of 6RuBp molecules?

(a) 12ATP and 6NADPH
(b) 12ATP only
(c) 6ATP and 6NADPH
(d) 6ATP only

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Next

Back

Time Remaining: 41 /45 (Minutes)

Test 2 Unit 2 Bioenergetics A — Biology Unit Wise

The initial CO_2 acceptor in C3 cycle is:

(a) 3-Phosphoglycertrae (b) RuBP
(c) Rubisco (d) G_3P

A B C D

Next

Back

Time Remaining: 47 /45 (Minutes)

Test 2 Unit 2 Bioenergetics A — Biology Unit Wise

The unstable 6-carbon compound in Calvin cycle breaks down into:

(a) Two 3-carbon compounds
(b) Three 2-carbon compounds
(c) Six 1-carbon compounds
(d) Six 3-carbon compounds

Next

Back

Time Remaining: 41 /45 (Minutes)

Test 2 Unit 2 Bioenergetics A | Biology Unit Wise

ATPs produced in each Calvin cycle are:

(a) 0 (b) 1
(c) 3 (d) 6

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Next

Back

Time Remaining: 40/45 (Minutes)

Test 2 Unit 2 Bioenergetics A — Biology Unit Wise

For the formation on one ATP and one NADPH, the Z-scheme will run:

(a) 1-time
(b) 2 times
(c) 3 times
(d) 6 six times

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A B C D

Next

Back

Time Remaining: 40/45 (Minutes)

Test 2 Unit 2 Bioenergetics A — Biology Unit Wise

Choose the wrong statement:

(a) PS-I involves in light reactions first and PS-II involves later on
(b) PS-I absorbs photons
(c) Oxygen is not liberated in PS-I
(d) All the statements are wrong

Next

Back

Time Remaining: 40/45 (Minutes)

Test 2 Unit 2 Bioenergetics A — Biology Unit Wise

How many G_3P molecules are yielded during one Calvin cycle?

(a) 1
(b) 2
(c) 5
(d) 6

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A B C D

Next

Back

Time Remaining: 40/45 (Minutes)

Test 2 Unit 2 Bioenergetics A | Biology Unit Wise

How many CO_2 molecules are yielded during one Calvin cycle?

(a) 0
(b) 1
(c) 3
(d) 6

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A B C D

Next

Back

Time Remaining: 40/45 (Minutes)

Test 2 Unit 2 Bioenergetics A — Biology Unit Wise

All of the following are involved in both cyclic and non-cyclic photophosphorylation except:

(a) Plastocyanin
(b) Photosystem I
(c) Plastoquinone
(d) Ferredoxin

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A B C D

Next

Back

Time Remaining 40/45 (Minutes)

During chemiosmosis of photosynthesis, the pumping of protons is:

(a) Across outer membrane of chloroplast
(b) Across inner membrane of chloroplast
(c) From stroma to thylakoid lumen
(d) From thylakoid lumen to stroma

Next

Back

Time Remaining: 39/45 (Minutes)

Test 2 Unit 2 Bioenergetics A — Biology Unit Wise

The pathway that will produce oxygen during photosynthesis is:

(a) Electron transport pathway
(b) Non-cyclic electron pathway
(c) Light-independent reactions
(d) Cyclic electron pathway

Submit Quiz

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Bioenergetics 'A'

UNIT WISE TEST 2 (Unit 2)

By: Prof. M. Umair Bhatti

01

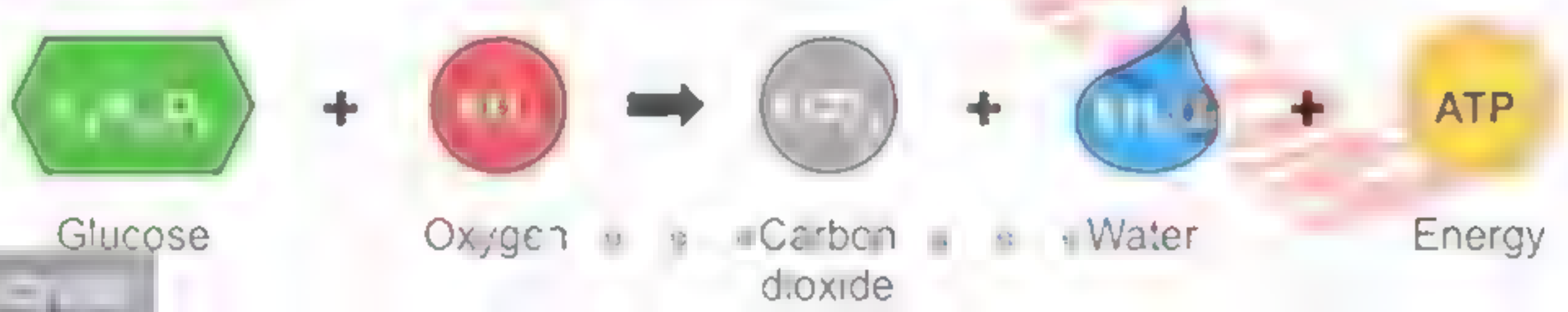
Which of the following statements about photosynthesis is wrong?

(a) Carbon dioxide molecules are bound into carbohydrates during the second half of the process

(b) It is a catabolic process that releases the energy stored in glucose molecules

(c) Oxygen is released as a waste product

(d) May occur in both prokaryotic and eukaryotic cells



02

How does photosynthesis occur?

(a) Glucose is broken down into carbon dioxide using the energy of the sun

(b) The products of the light reaction are used to create glucose from carbon dioxide

(c) The sunlight directly powers ATP synthase, which catalyzes the creation of glucose

(d) The electrons from metals are used for chemiosmosis

03

NADPH and ATP, formed during light reaction of photosynthesis have:

(a) Assimilating & reducing power respectively

(b) Reducing & assimilating power respectively

(c) Oxidizing & reducing power respectively

(d) Reducing & oxidizing power respectively

04

What is wrong about dark reaction of photosynthesis?

(a) It only takes place in dark

(b) It utilizes the light directly

(c) It is independent from light reaction

(d) All of these

05

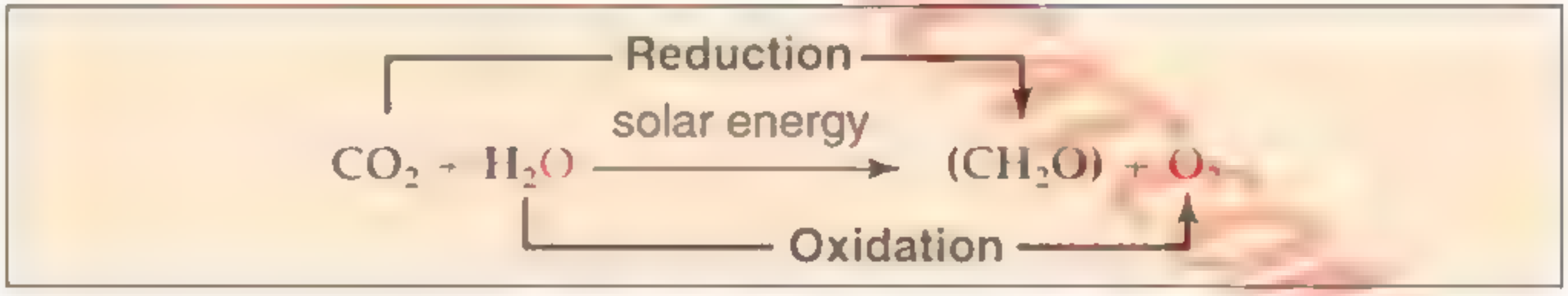
CO_2 and water during photosynthesis:

(a) React with each other

(b) Show their action at same time

(c) Is reduced and oxidized, respectively

(d) None of these



06

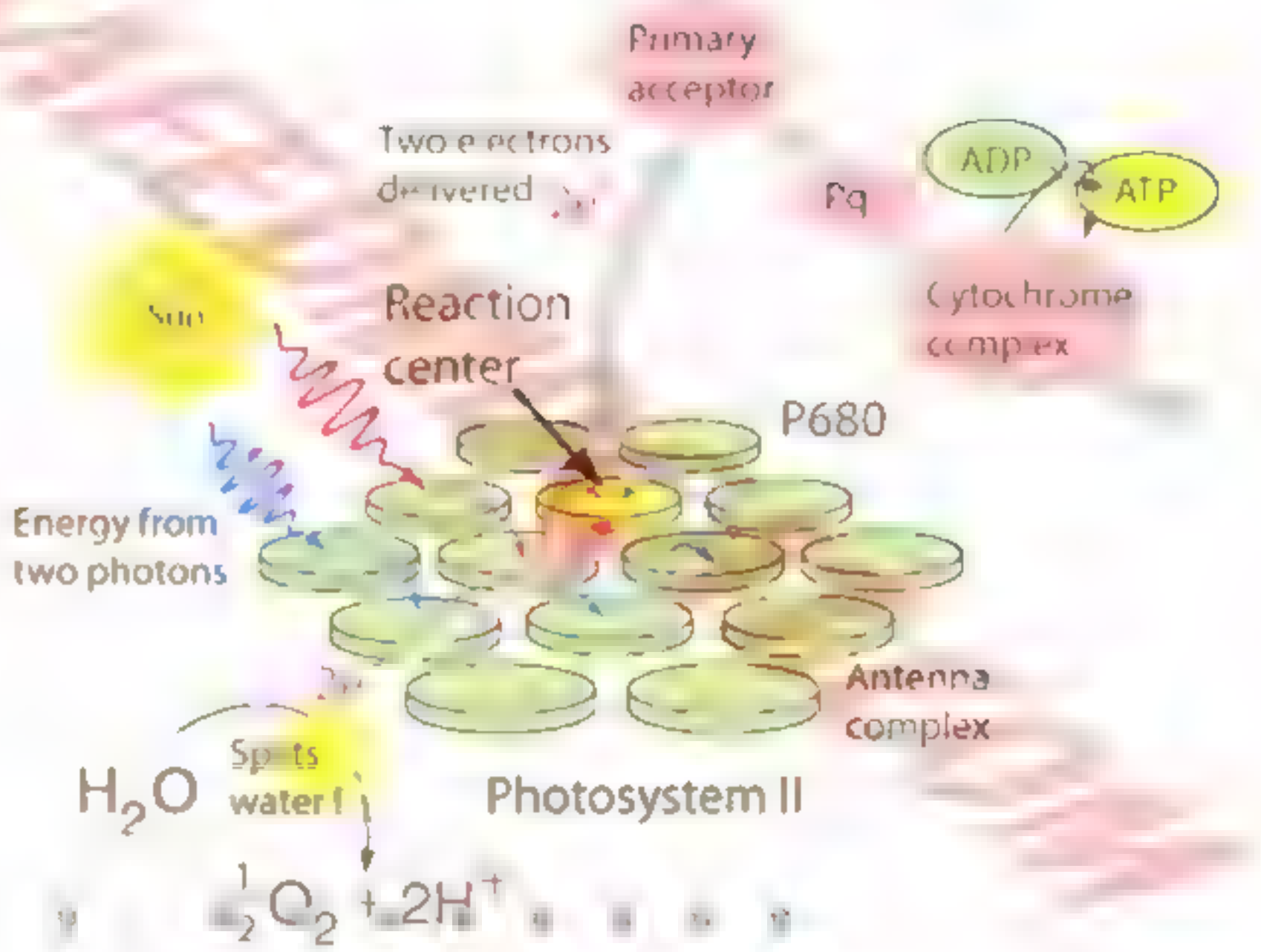
Photolysis is the splitting of water in the presence of:

(a) Light

(b) Enzymes

(c) Oxygen

(d) Both 'a' & 'b'



07

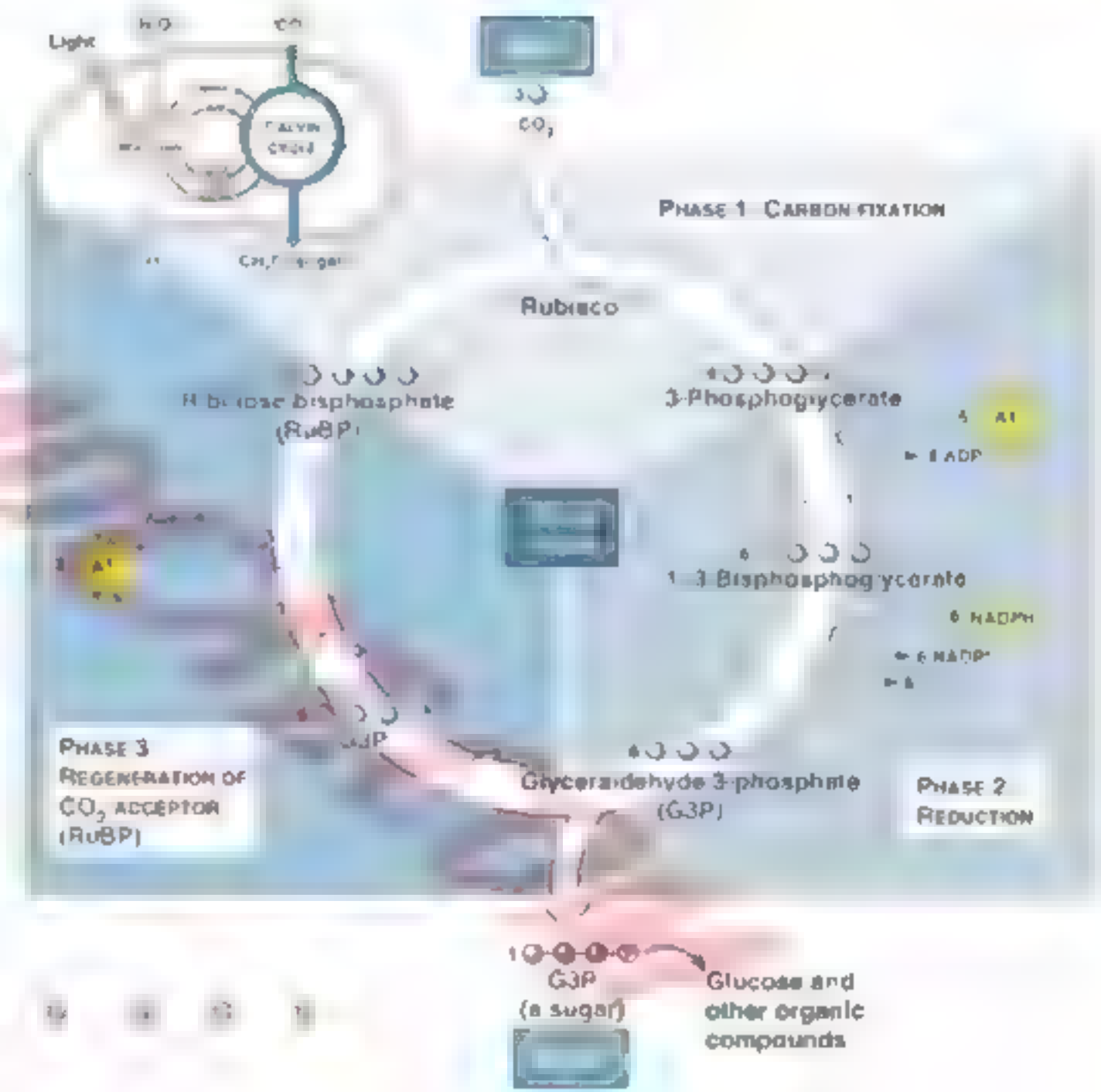
Dark reaction of photosynthesis is also called as:

(a) C_4 cycle

(b) Light dependent reaction

(c) Calvin cycle

(d) All of these



08

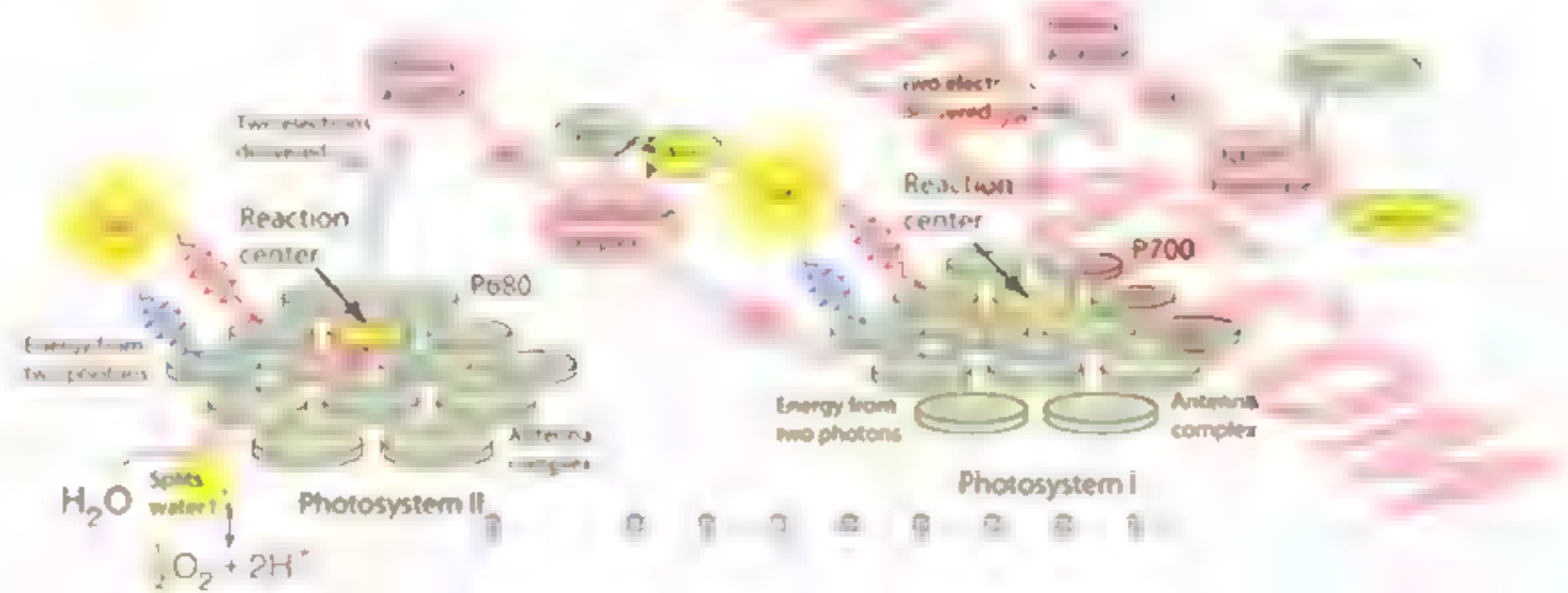
Unidirectional flow of e- in non-cyclic photophosphorylation is:

(a) PS II $\xrightarrow{e^-}$ PS I $\xrightarrow{e^-}$ NADP $\xrightarrow{e^-}$ Water

(b) Water $\xrightarrow{e^-}$ PSII $\xrightarrow{e^-}$ PS I $\xrightarrow{e^-}$ NADP

(c) PS I $\xrightarrow{e^-}$ NADP $\xrightarrow{e^-}$ Water $\xrightarrow{e^-}$ PS II

(d) Water $\xrightarrow{e^-}$ PS I $\xrightarrow{e^-}$ PS II $\xrightarrow{e^-}$ NADP



09

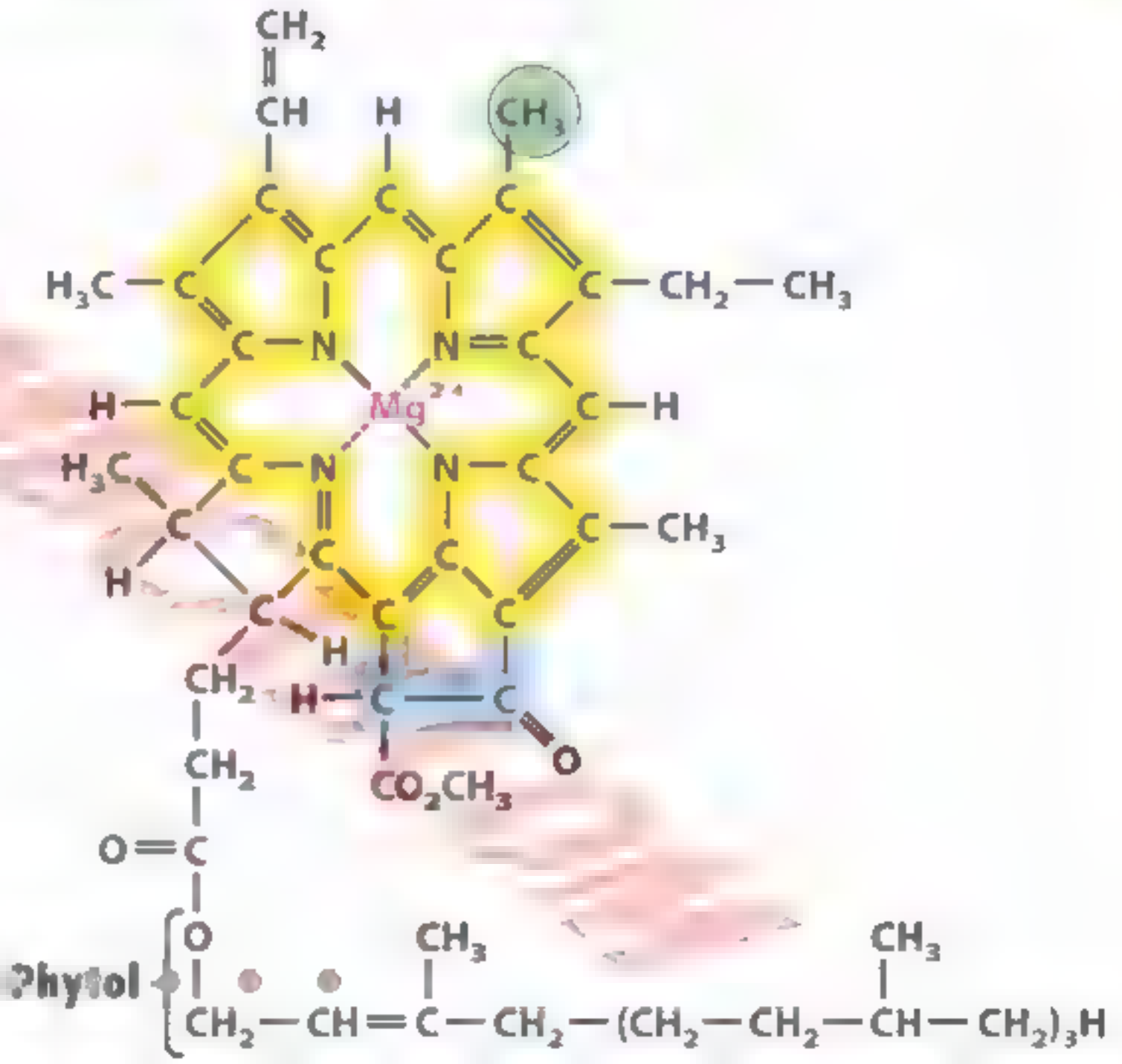
The head and tail of chlorophyll are made up of _____ respectively:

(a) Pyrrole & Tetrapyrrole

(b) Porphyrin & Phytin

(c) Porphyrin & Phytol

(d) Tetrapyrrole & Magnesium



10

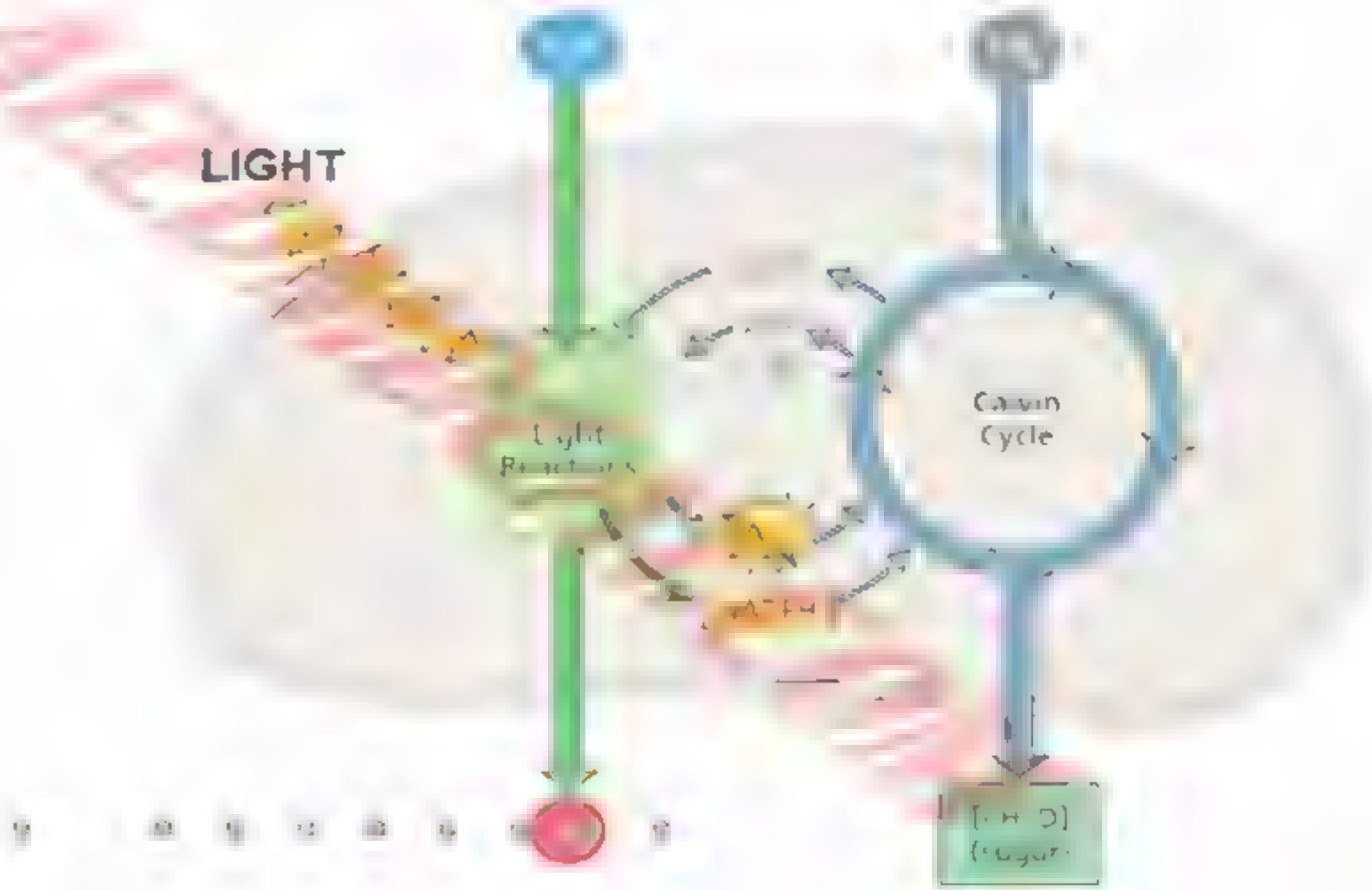
Which of the following connect the primary and secondary processes of photosynthesis?

(a) $NADPH_2$

(b) ATP & NADPH

(c) ATP

(d) Ferridoxins



11

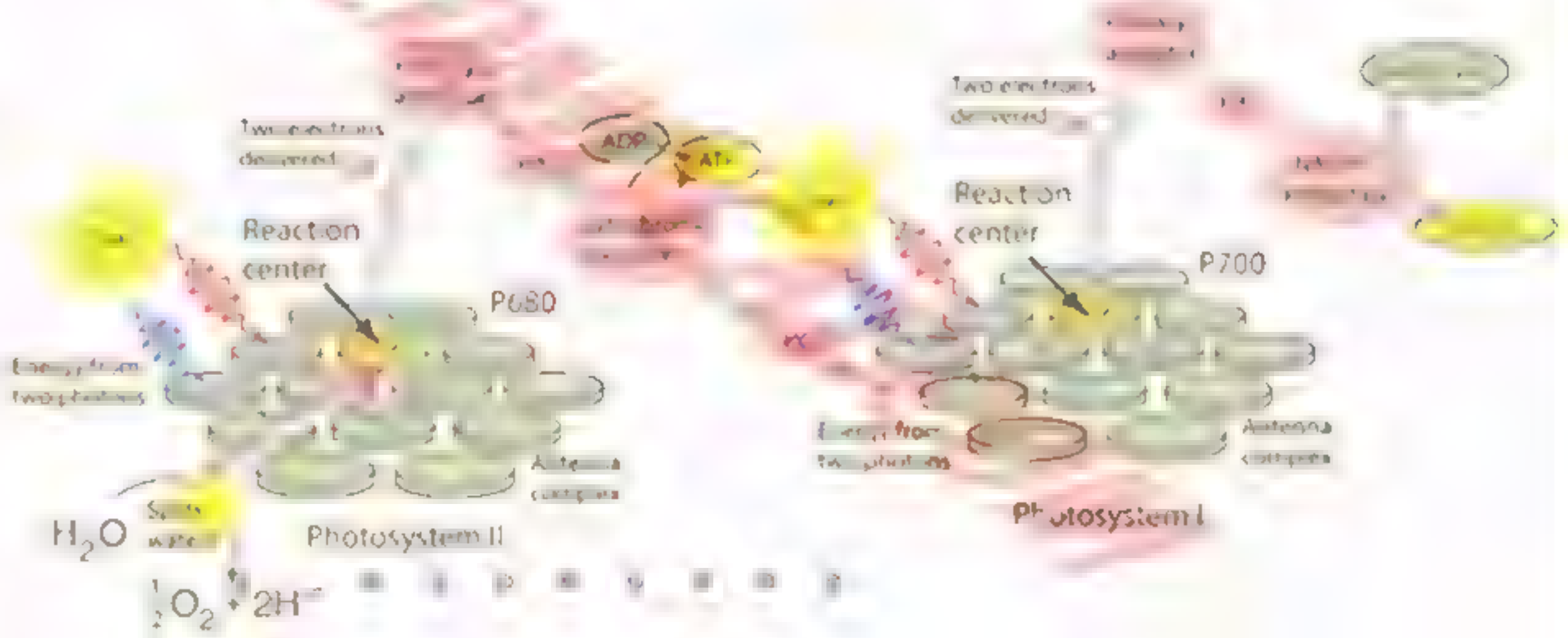
In non-cyclic photophosphorylation, the electron emitted by P_{680} is replaced by electron from:

(a) NADP

(b) Water

(c) Ferredoxin

(d) Chlorophyll-a



12

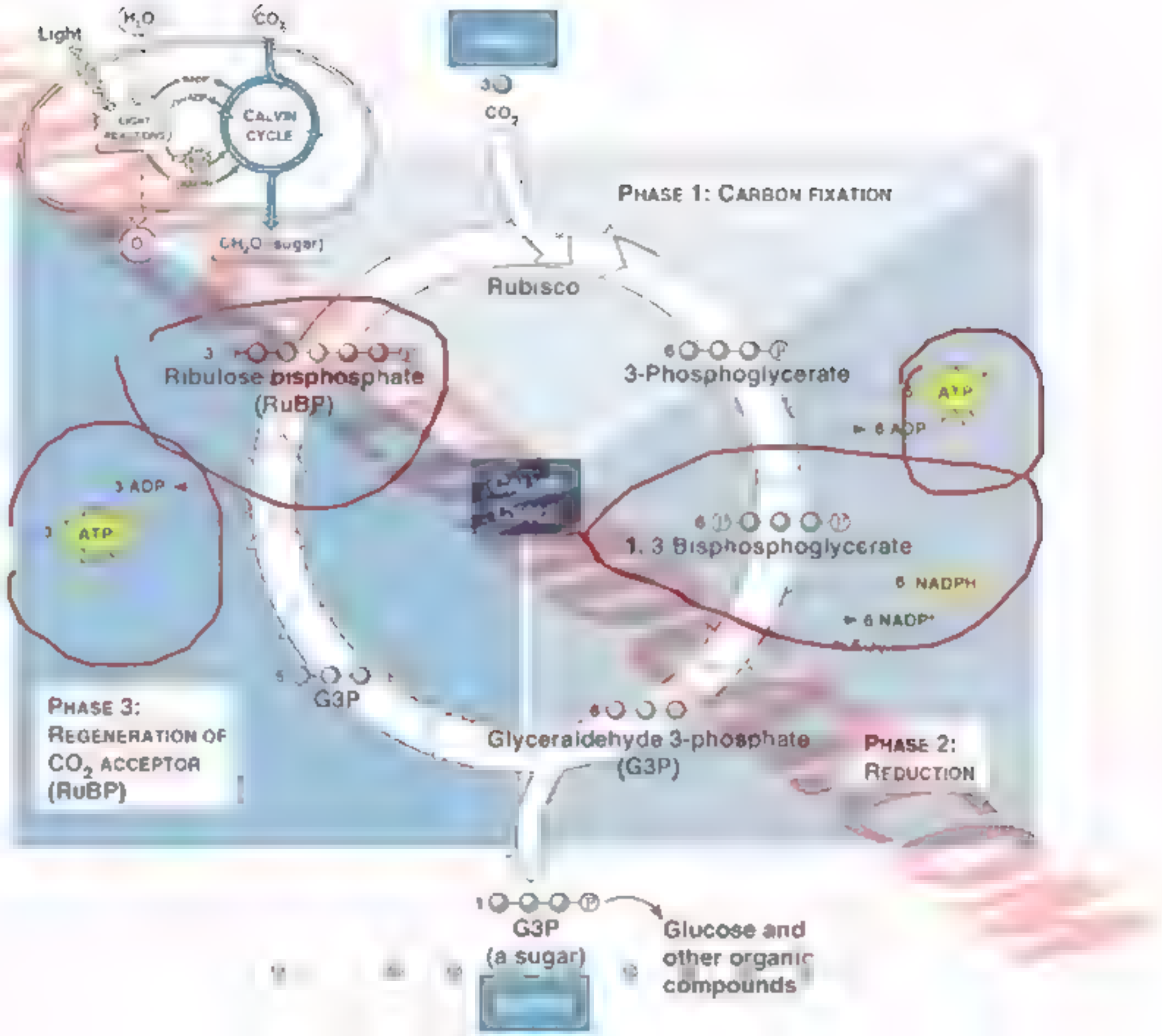
Which of the following molecules are formed in the Calvin cycle while using ATP?

(a) 1,3-bisphosphoglycerate and Ribulose bisphosphate

(b) Ribulose bisphosphate and Glyceraldehyde-3-phosphate

(c) 3-phosphoglycerate and Ribulose bisphosphate

(d) Glyceraldehyde-3-phosphate and Glucose


Light
H_2O
CO_2
Light reactions
Calvin cycle
$(CH_2O$ sugar)
O_2
CO_2
Phase 1: Carbon fixation
Rubisco
3
Ribulose bisphosphate (RuBP)
6
3-Phosphoglycerate
6 ATP
6 ADP
3 ADP
3 ATP
6
1, 3 Bisphosphoglycerate
6 NADPH
6 NADP+
5
G3P
6
Glyceraldehyde 3-phosphate (G3P)
Phase 3: Regeneration of CO_2 acceptor (RuBP)
Phase 2: Reduction
1
G3P (a sugar)
Glucose and other organic compounds

13

Which of the following statements is true for the Calvin cycle?

(a) It does not depend on sunlight to operate

(b) It is fueled by glucose

(c) Carbon dioxide is converted into water and oxygen

(d) It occurs in the nucleus of a cell

14

In the Calvin cycle, what is the first product formed after the entry of carbon dioxide?

(a) Glucose

(b) Ribulose-1,5-bisphosphate

(c) 3-Phosphoglycerate

(d) Glyceraldehyde-3-phosphate

15

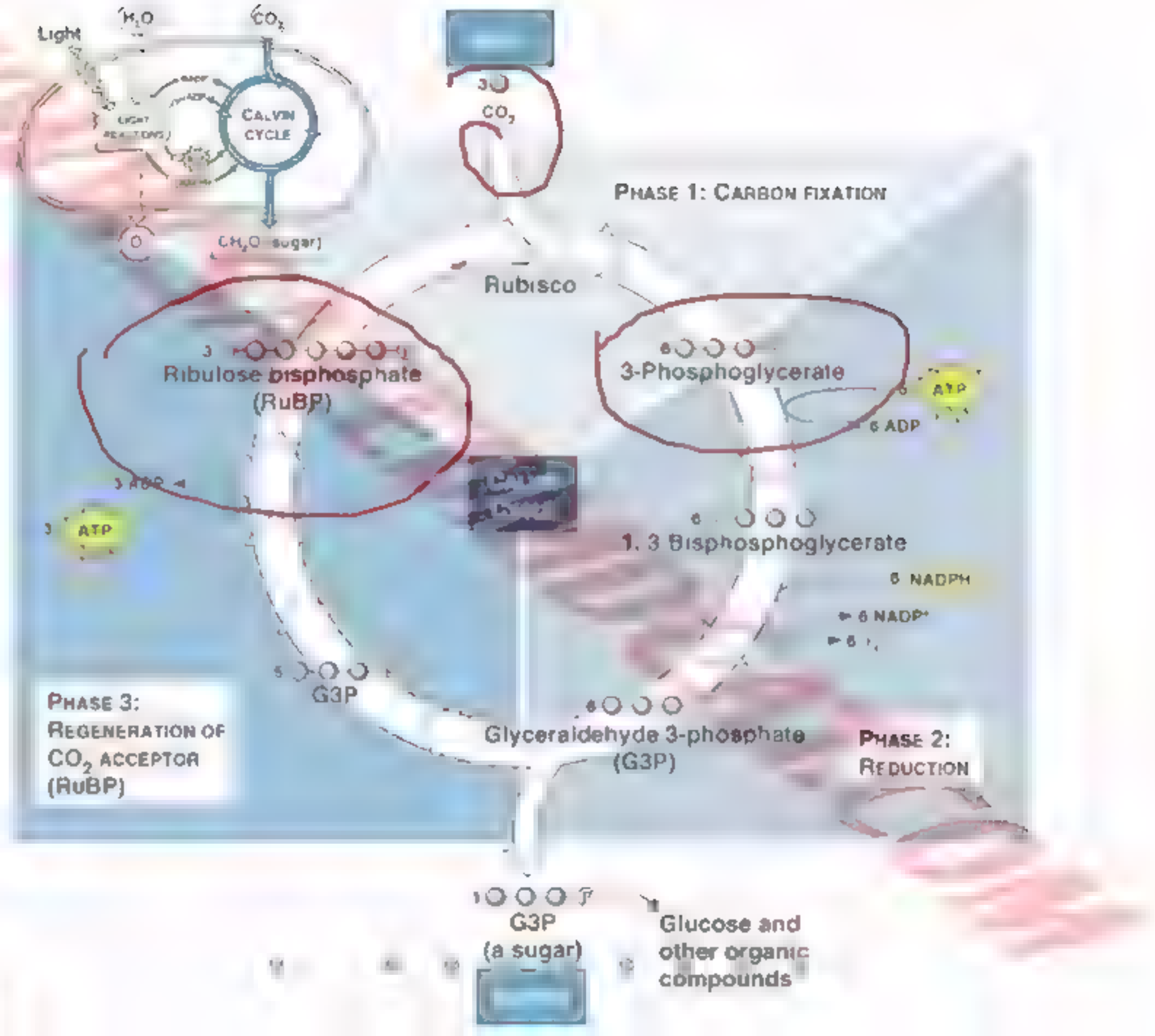
In the Calvin cycle, which molecule combines with carbon dioxide?

(a) Glucose

(b) 3-phosphoglycerate

(c) Glyceraldehyde-3-phosphate

(d) Ribulose-1,5-bisphosphate


Light
H_2O
CO_2
LIGHT REACTIONS
CALVIN CYCLE
$(CH_2O$ sugar)
3
CO_2
PHASE 1: CARBON FIXATION
Rubisco
3
Ribulose bisphosphate (RuBP)
3 ADP
3 ATP
6
3-Phosphoglycerate
6 ATP
6 ADP
6
1, 3 Bisphosphoglycerate
6 NADPH
6 NADP+
6
G3P
PHASE 3: REGENERATION OF CO_2 ACCEPTOR (RuBP)
6
Glyceraldehyde 3-phosphate (G3P)
PHASE 2: REDUCTION
1
G3P (a sugar)
Glucose and other organic compounds

16

Arrange the two following lists into their most appropriate pairs:

Column I	Column II
A - Antennae pigment molecules	I - Dioxygen (O_2) generation
B - Thylakoid membrane	II - Reduction of ferredoxin
C - Photosystem II	III - Electron transport chain
D - Photosystem I	IV - Absorption of light

(a) A-I, B-II, C-III, D-IV
(b) A-IV, B-III, C-I, D-II
(c) A-IV, B-III, C-II, D-I
(d) A-II, B-IV, C-I, D-II

17

Both photosynthesis and respiration require:

(a) Chloroplasts

(b) Sunlight

(c) Mitochondria

(d) Cytochromes

18

Which one of the following is not true about the light reactions of photosynthesis?

(a) NADPH is not produced in cyclic electrons transport in light reactions.

(b) The flow of electrons from water to NADP in non-cyclic electron transport produces one ATP

(c) Reactions of the two photosystems are needed for the reduction of NADP

(d) P_{680} and P_{700} are the reaction centers of PS I and PS II respectively reactions

19

The pathway that will produce oxygen during photosynthesis is:

(a) Krebs cycle

(b) Non-cyclic electron flow

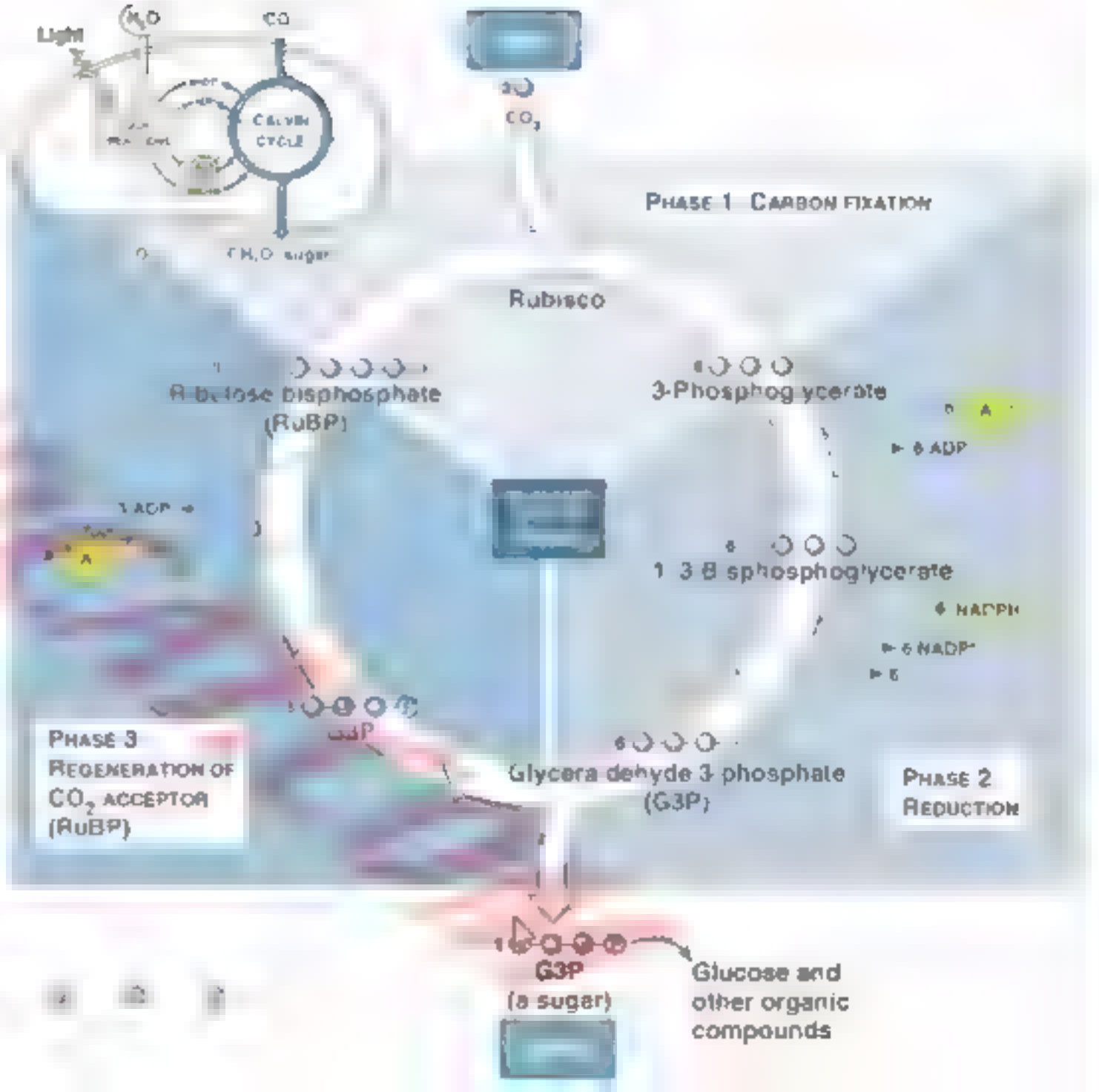
(c) Light-independent reactions

(d) Cyclic electron flow

20

Calvin cycle consists of how many phases?

(a) 1
(b) 2
(c) 3
(d) 4



3-Phosphoglycerate is formed during _____ phase of C_3 cycle:

(a) Preparatory

(b) Oxidative

(c) Reduction

(d) Carbon fixation

22

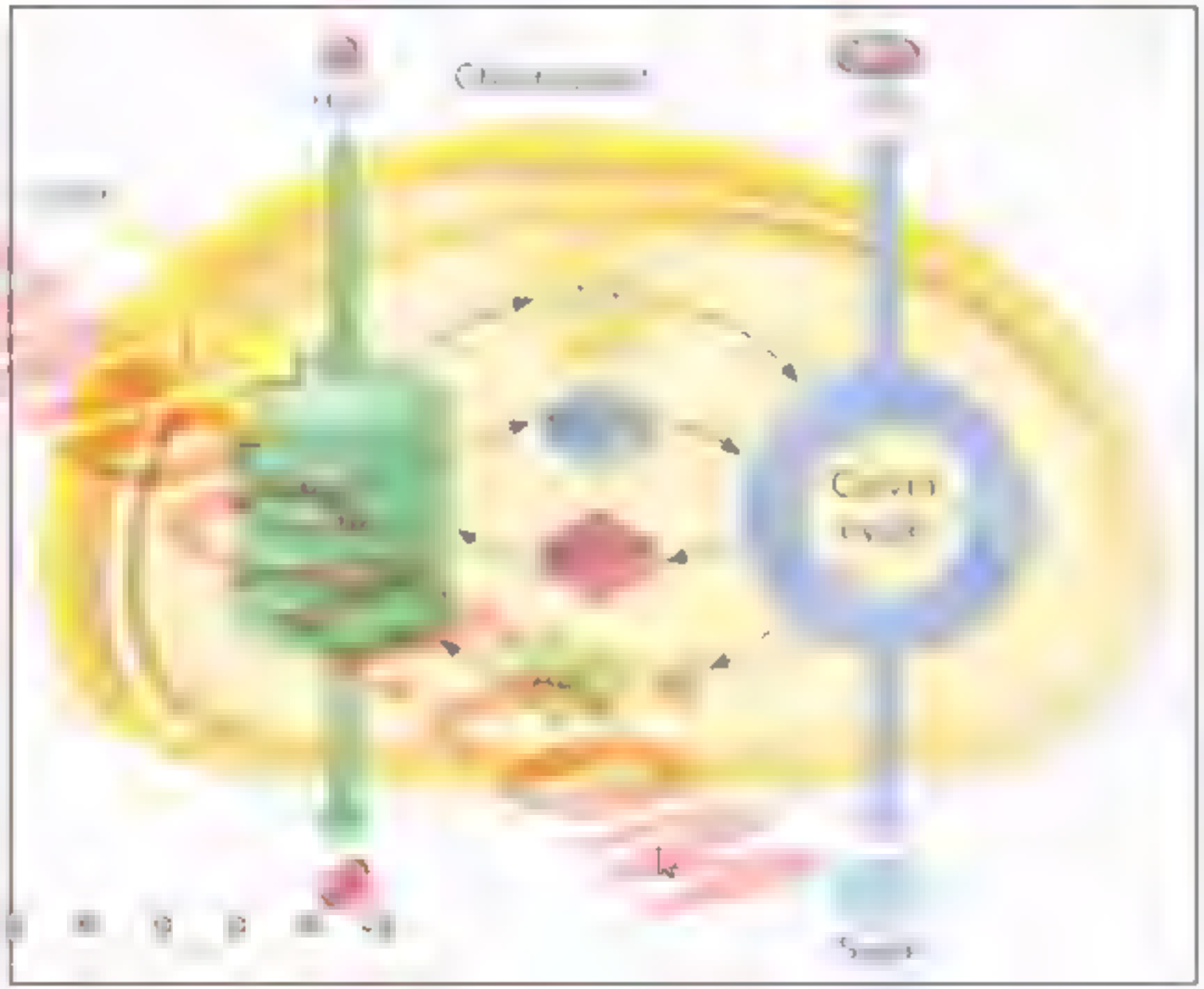
Where does the Calvin Cycle occur?

(a) Thylakoid

(b) Stroma

(c) Lumen

(d) Mitochondria



23

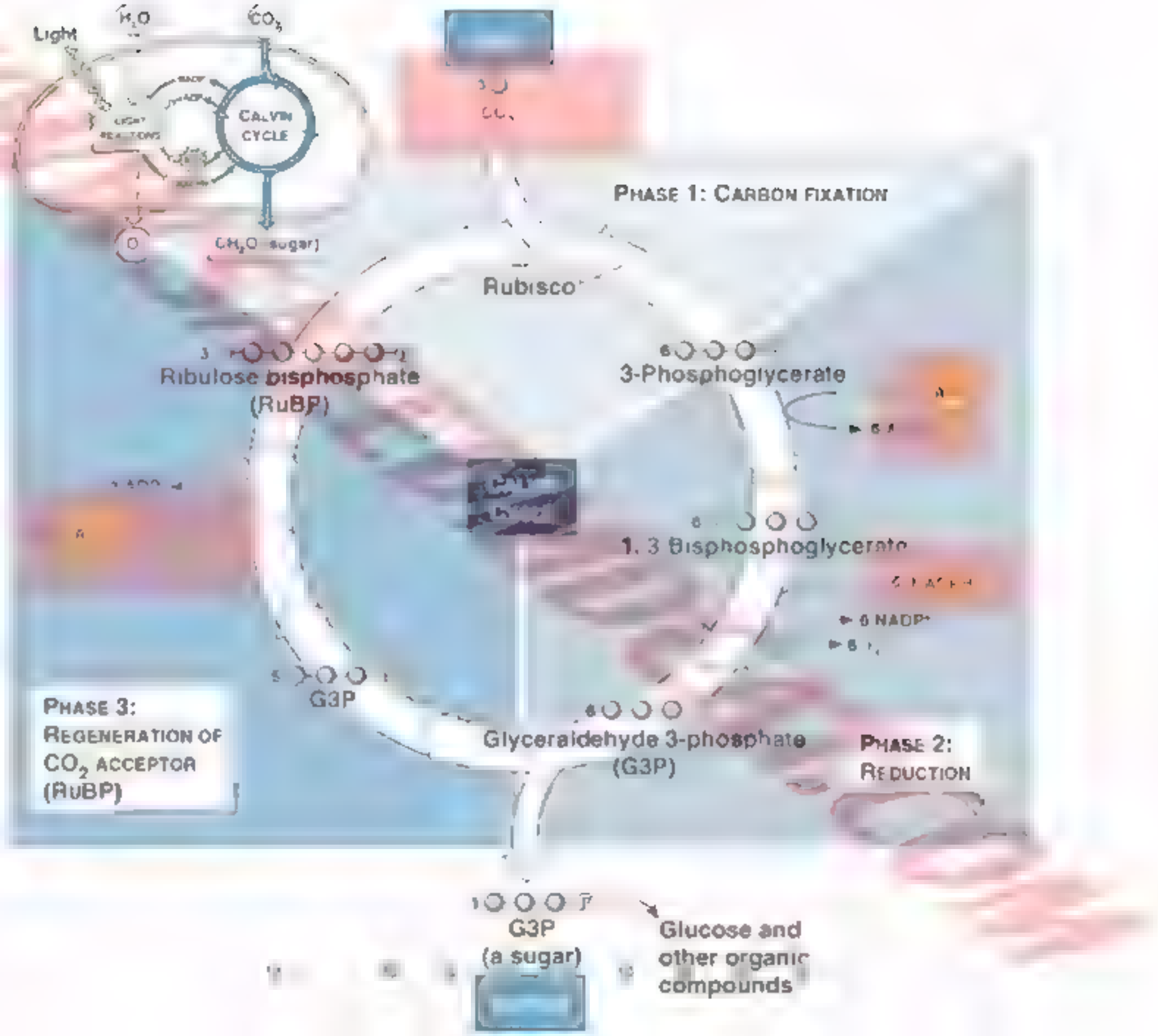
Which of the following is not a reactant of the Calvin Cycle?

(a) NADPH

(b) ATP

(c) Oxygen

(d) Carbon dioxide


Light
H_2O
CO_2
CALVIN CYCLE
$(CH_2O$ sugar)
PHASE 1: CARBON FIXATION
Rubisco
Ribulose bisphosphate (RuBP)
3-Phosphoglycerate
1, 3 Bisphosphoglycerate
6 NADPH
6 NADP+
G3P
PHASE 3: REGENERATION OF CO_2 ACCEPTOR (RuBP)
Glyceraldehyde 3-phosphate (G3P)
PHASE 2: REDUCTION
G3P (a sugar)
Glucose and other organic compounds

24

When carbon first enters the Calvin cycle, what molecule does it combine with?

(a) 3PG

(b) G_3P

(c) RuBP

(d) ATP

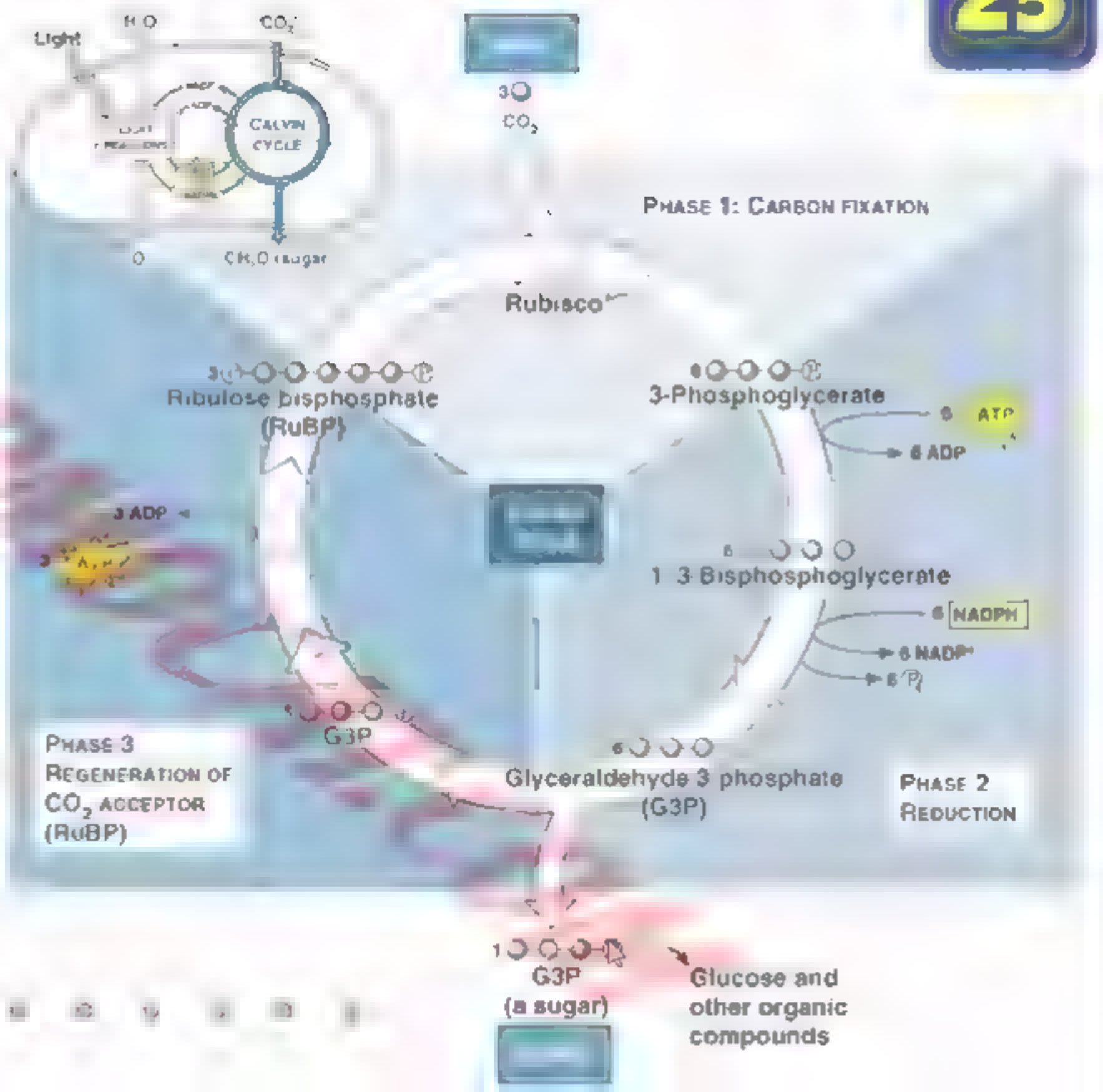
Calvin cycle is involved in the:

(a) Synthesis of carbohydrates

(b) Synthesis of NADPH

(c) Synthesis of ATP

(d) Hydrolysis of water



26

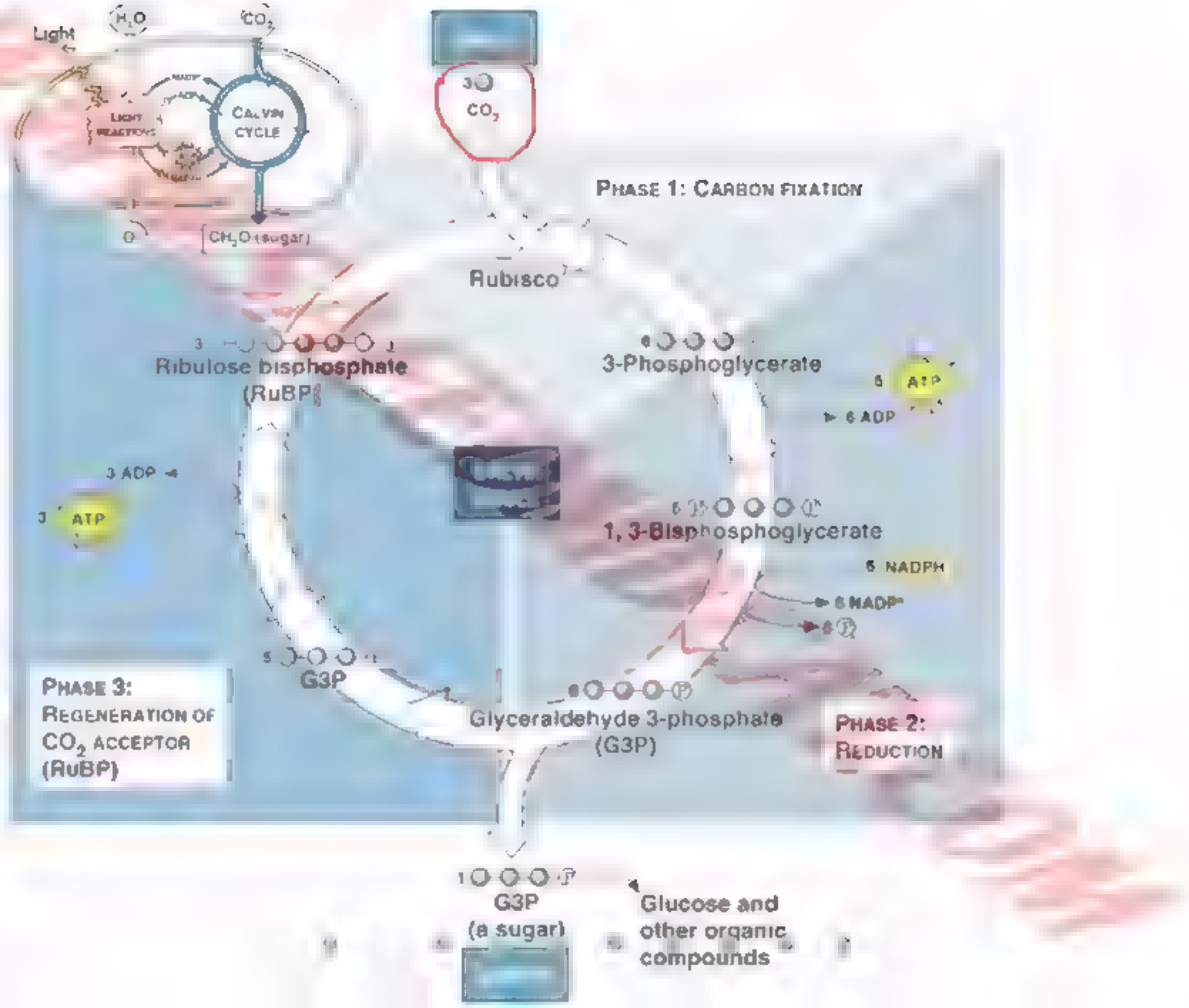
How many molecules of 3-phosphoglycerate is synthesized from the reaction between $6CO_2$ and 6RuBp?

(a) 3

(b) 6

(c) 12

(d) 18


Light
H_2O
CO_2
Light reactions
Calvin cycle
$[CH_2O]$ (sugar)
O
3 CO_2
Phase 1: Carbon fixation
Rubisco
3
Ribulose bisphosphate (RuBP)
3 ADP
3 ATP
6
3-Phosphoglycerate
6 ATP
6 ADP
6
1, 3-Bisphosphoglycerate
6 NADPH
6 NADP+
6
5
G3P
Phase 3: Regeneration of CO_2 acceptor (RuBP)
6
Glyceraldehyde 3-phosphate (G3P)
Phase 2: Reduction
1
G3P (a sugar)
Glucose and other organic compounds

27

How many ATP and NADPH molecules are used in the reduction phase to convert 3-phosphoglycerate to glyceraldehyde-3-phosphate?

(a) 6 ATP & 6 NADPH

(b) 6 ATP only

(c) 12 ATP & 12 NADPH

(d) 12 NADPH only

28

How many glyceraldehyde-3-phosphates are required to synthesize one glucose molecule?

(a) 2

(b) 3

(c) 6

(d) 12

C_3 cycle involves all the steps except:

(a) Reduction

(b) Carbon fixation

(c) ATP synthesis

(d) Regeneration of RuBP

30

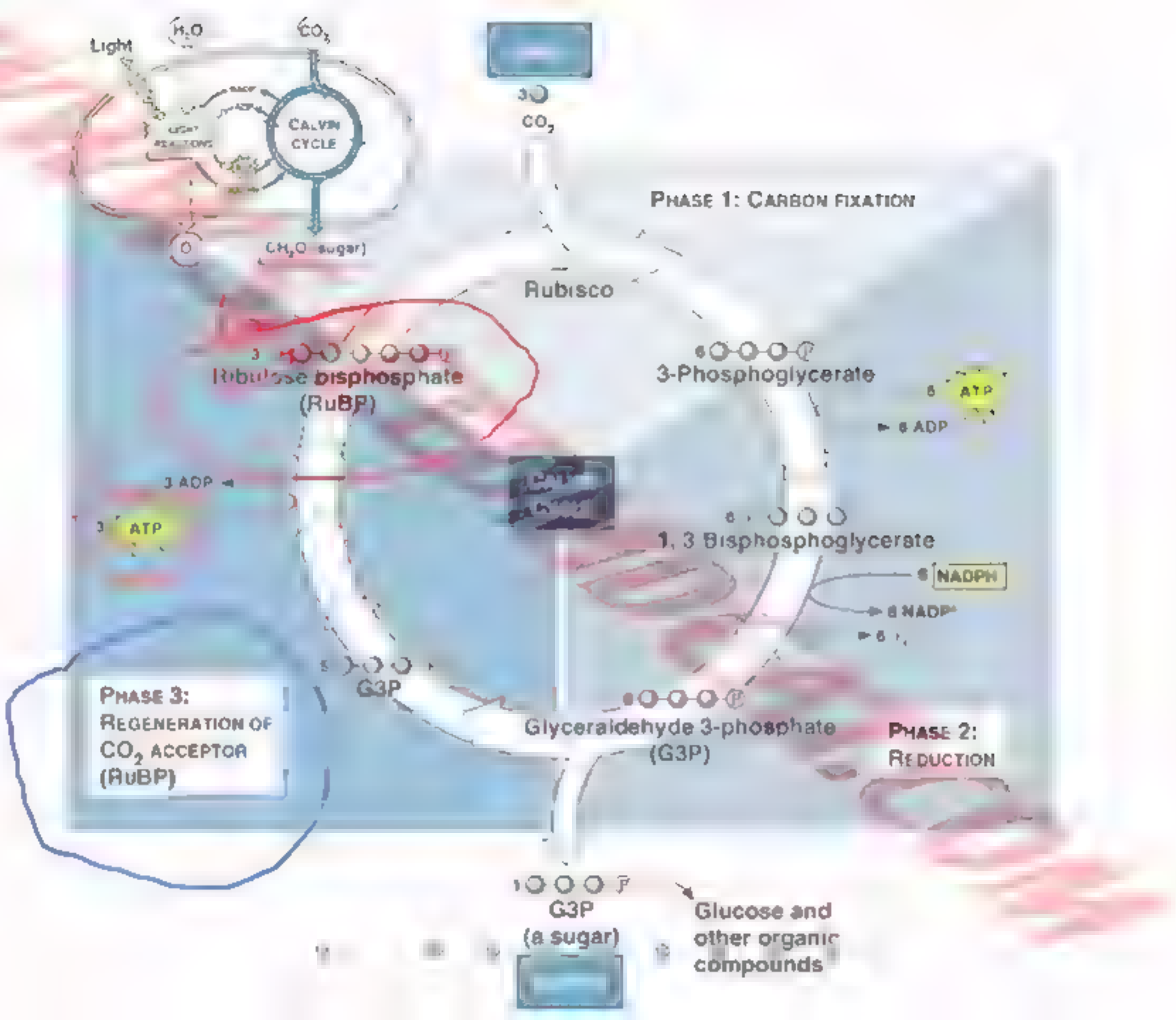
How many ATP and NADPH are used for the regeneration of 6RuBp molecules?

(a) 12ATP and 6NADPH

(b) 12ATP only

(c) 6ATP and 6NADPH

(d) 6ATP only


Light
H_2O
CO_2
LIGHT REACTIONS
CALVIN CYCLE
(CH_2O sugar)
3 CO_2
PHASE 1: CARBON FIXATION
Rubisco
3 Ribulose bisphosphate (RuBP)
6 3-Phosphoglycerate
6 ATP
6 ADP
3 ADP
3 ATP
6 1, 3 Bisphosphoglycerate
6 NADPH
6 NADP+
6 P$_i$
5 G3P
PHASE 3: REGENERATION OF CO_2 ACCEPTOR (RuBP)
6 Glyceraldehyde 3-phosphate (G3P)
PHASE 2: REDUCTION
1 G3P (a sugar)
Glucose and other organic compounds

31

The initial CO_2 acceptor in C_3 cycle is:

(a) 3-Phosphoglycertrae

(b) RuBP

(c) Rubisco

(d) G_3P

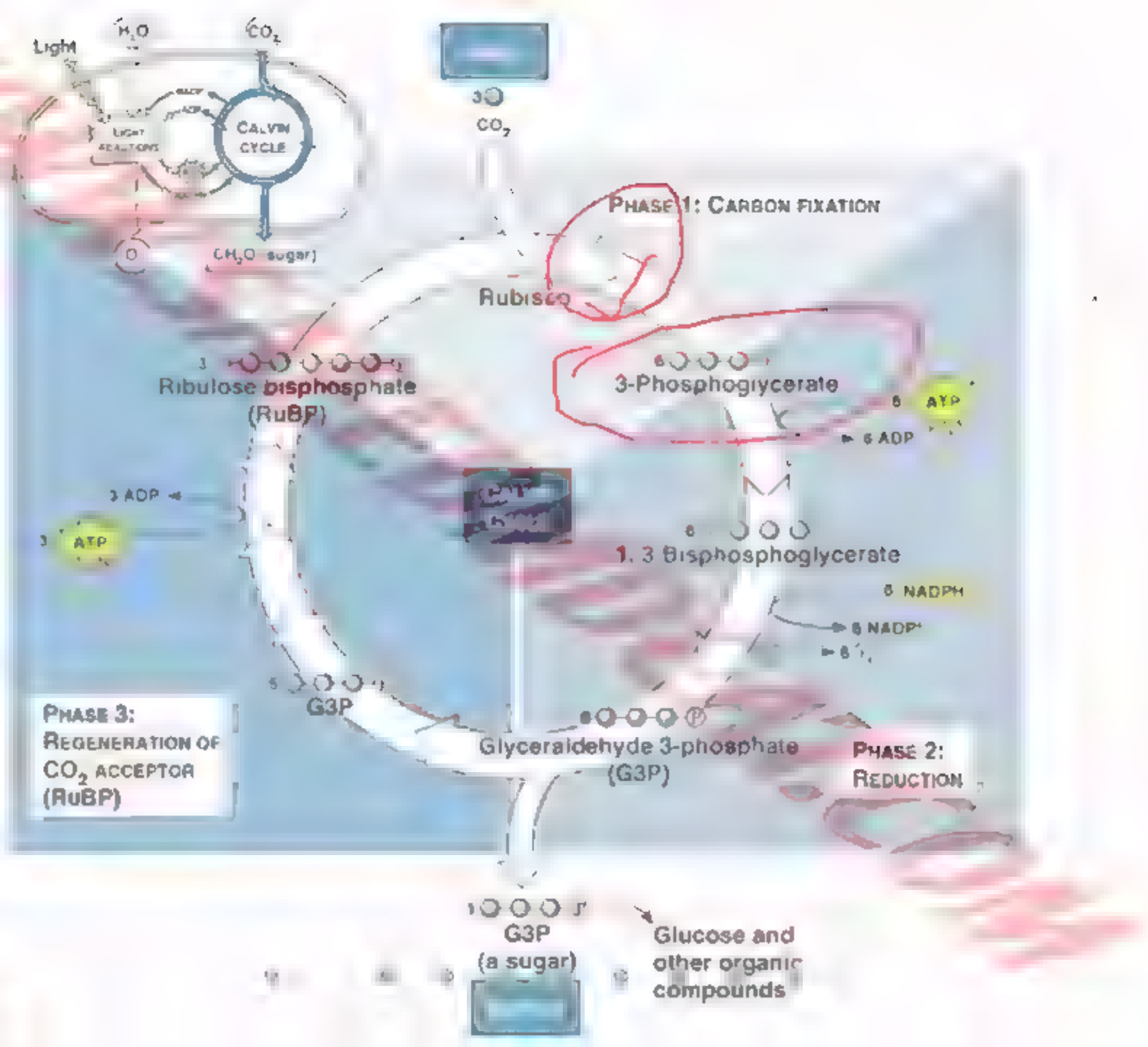
The unstable 6-carbon compound in Calvin cycle breaks down into:

(a) Two 3-carbon compounds

(b) Three 2-carbon compounds

(c) Six 1-carbon compounds

(d) Six 3-carbon compounds


Light
H_2O
CO_2
Light reactions
Calvin cycle
$[CH_2O]$ sugar]
$3\ CO_2$
Phase 1: Carbon fixation
Rubisco
3
Ribulose bisphosphate
(RuBP)
6
3-Phosphoglycerate
6 ATP
6 ADP
3 ADP
3 ATP
6
1, 3 Bisphosphoglycerate
6 NADPH
6 NADP+
6 H_2O
5
G3P
Phase 3:
Regeneration of
CO_2 acceptor
(RuBP)
6
Glyceraldehyde 3-phosphate
(G3P)
Phase 2:
Reduction
1
G3P
(a sugar)
Glucose and
other organic
compounds

ATPs produced in each Calvin cycle are:

(a) 0

(b) 1

(c) 3

(d) 6

34

For the formation on one ATP and one NADPH, the Z-scheme will run:

(a) 1 time

(b) 2 times

(c) 3 times

(d) 6 times

35

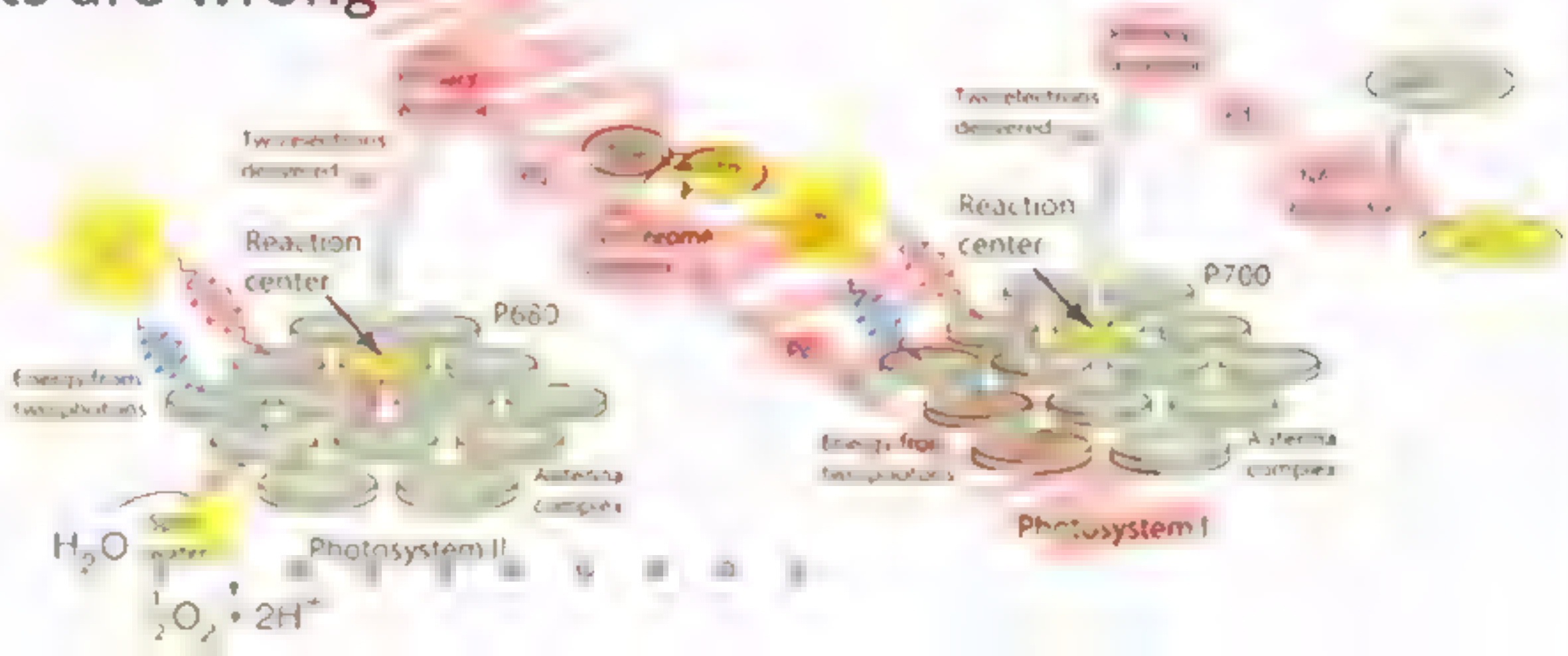
Choose the wrong statement:

(a) PS-I involves in light reactions first and PS-II involves later on

(b) PS-I absorbs photons

(c) Oxygen is not liberated in PS-I

(d) All the statements are wrong



How many G_3P molecules are yielded during one Calvin cycle?

(a) 1

(b) 2

(c) 5

(d) 6

37

How many CO_2 molecules are yielded during one Calvin cycle?

(a) 0

(b) 1

(c) 3

(d) 6

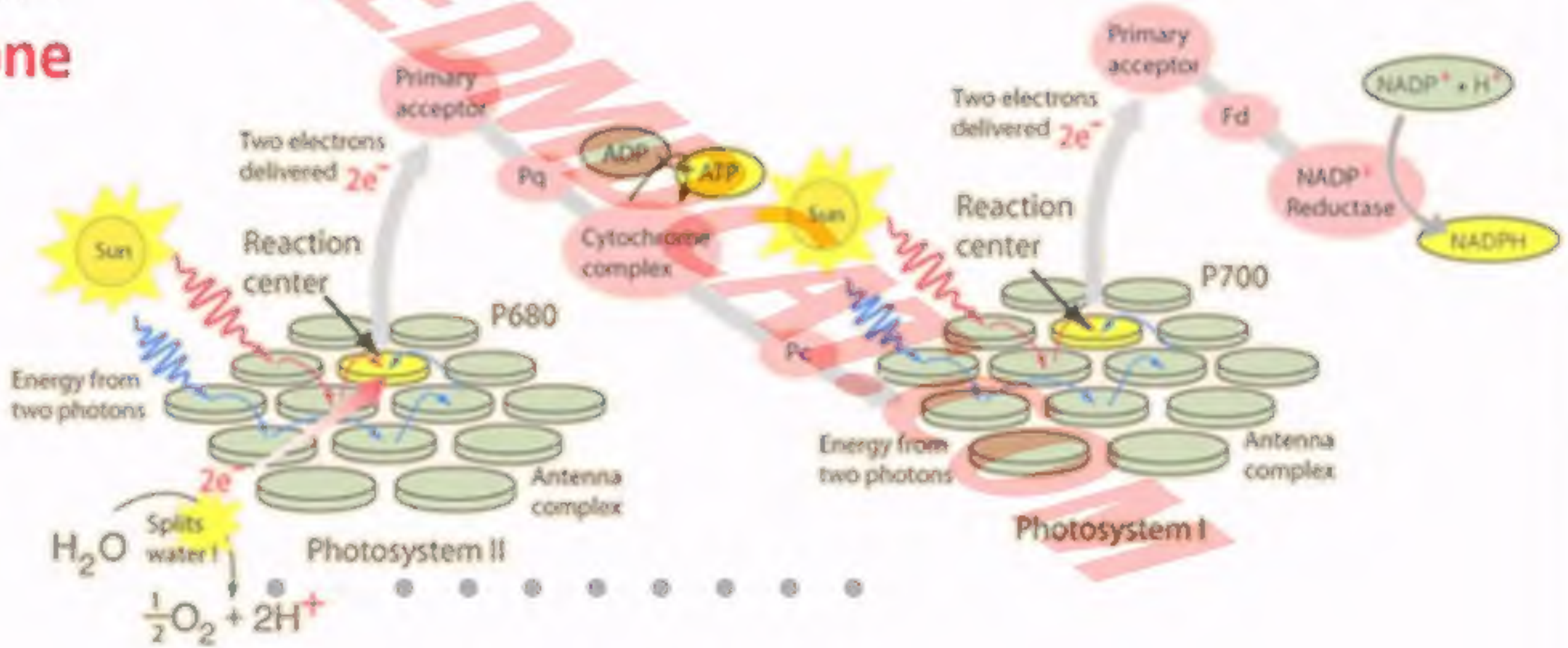
All of the following are involved in both cyclic and non-cyclic photophosphorylation except:

(a) Plastocyanin

(b) Photosystem I

(c) Plastoquinone

(d) Ferredoxin



During chemiosmosis of photosynthesis, the pumping of protons is:

(a) Across outer membrane of chloroplast

(b) Across inner membrane of chloroplast

(c) From stroma to thylakoid lumen

(d) From thylakoid lumen to stroma

The pathway that will produce oxygen during photosynthesis is:

(a) Electron transport pathway

(b) Non-cyclic electron pathway

(c) Light-independent reactions

(d) Cyclic electron pathway